WHAT IS CLAIMED IS:

1. A method of controlling an actuating mechanism of a prosthesis provided on one side of the lower body of an individual, the individual having a healthy leg on the other side, the method comprising:

providing a plurality of artificial proprioceptors, at least one of the artificial proprioceptors being on the side of the healthy leg, and at least one of the artificial proprioceptors being on provided with the prosthesis;

generating data signals in real time at the artificial proprioceptors; and

generating control signals in real time for controlling the actuating mechanism in response to the data signals.

2. A method according to claim 1, wherein:

at least one of the data signals is supplied via a wired connection.

3. A method according to claim 1, wherein:

at least one of the data signals is supplied via a wireless connection.

4. A method according to claim 1, wherein:

the actuating mechanism is a passive electro-mechanical component that absorbs mechanical energy in order to modify dynamics of mechanical joints of the prosthesis

5. A method according to claim 1, wherein:

the actuating mechanism is an active electro-mechanical component that absorbs and supplies mechanical energy in order to modify dynamics of mechanical joints of the prosthesis.

6. A method according to claim 1, wherein:

the artificial proprioceptors include myoelectric sensors.

7. A method according to claim 6, wherein:

the myoelectric sensors include external electrodes to measure myoelectric activity of skeletal muscles of the individual.

8. A method according to claim 6, wherein:

the myoelectric sensors include internal electrodes to measure myoelectric activity of skeletal muscles of the individual.

9. A method according to claim 1, wherein:

the artificial proprioceptors include neuro-sensors.

10. A method according to claim 9, wherein:

the neuro-sensors are electrodes to measure the summation of one or more action potentials of peripheral nerves of the individual.

11. A method according to claim 1, wherein:

the artificial proprioceptors include kinematic sensors.

12. A method according to claim 11, wherein:

th kinematic sensors include means for measuring the position of articulated joints of lower extremities parts of the individual.

13. A method according to claim 11, wherein:

the kinematic sensors include means for measuring the mobility speed of lower extremities parts of the individual.

14. A method according to claim 11, wherein:

the kinematic sensors include means for measuring the mobility acceleration of lower extremities parts of the individual.

15. A method according to claim 11, wherein:

at least one of the kinematic sensors is located at the shank of the healthy leg of the individual.

16. A method according to claim 11, wherein:

at least one of the kinematic sensors is located at a socket of the prosthesis.

17. A method according to claim 1, wherein:

the artificial proprioceptors include kinetic sensors.

18. A method according to claim 17, wherein:

the kinetic sensors include means for measuring rotational forces at articulated joints of lower extremities parts of the individual.

19. A method according to claim 17, wherein:

the kinetic sensors include means for measuring reaction forces at lower extremities parts of the individual.

20. A method according to claim 17, wherein:

at least one of the kinetic sensors is located at a transtibial post of the prosthesis.

21. A method according to claim 1, wherein:

the artificial proprioceptors include plantar pressure sensors.

22. A method according to claim 21, wherein:

the plantar pressure sensors include force-sensing resistors measuring the pressure forces at underfoot areas into at least one human body plan.

23. A method according to claim 21, wherein:

at least one of the plantar pressure sensors is located at a metatarsophalangeal region of a foot of the healthy leg; and

at least one of the plantar pressure sensors is located at a calcaneus region of the foot of the healthy leg.

24. A method according to claim 21, wherein:

at least one of the plantar pressure sensors is located at a metatarsophalangeal region of a prosthetic foot of the prosthesis; and

at least one of the plantar pressure sensors is located at a calcaneus region of the prosthetic foot of the prosthesis.

25. A device for controlling an actuating mechanism of a prosthesis provided on one side of the lower body of an individual, the individual having a healthy leg on the other side, the device comprising:

a plurality of artificial proprioceptors, at least one of the artificial proprioceptors being on the side of the healthy leg, and at least one of the artificial proprioceptors being on the side of the prosthesis;

means for generating data signals in real time at the artificial proprioceptors; and

means for generating control signals in real time for controlling the actuating mechanism in response to the data signals.

26. A device according to claim 25, wherein:

at least one of the data signals is supplied via a wired connection.

27. A device according to claim 25, wherein:

at least one of the data signals is supplied via a wireless connection.

28. A device according to claim 25, wherein:

the actuating mechanism is a passive electro-mechanical component that absorbs mechanical energy in order to modify dynamics of mechanical joints of the prosthesis.

29. A device according to claim 25, wherein:

the actuating mechanism is an active electro-mechanical component that absorbs and supplies mechanical energy in order to modify dynamics of mechanical joints of the prosthesis.

30. A device according to claim 25, wh rein:

the artificial proprioceptors include myoelectric sensors.

31. A device according to claim 30, wherein:

the myoelectric sensors include external electrodes to measure myoelectric activity of skeletal muscles of the individual.

32. A device according to claim 30, wherein:

the myoelectric sensors include internal electrodes to measure myoelectric activity of skeletal muscles of the individual.

33. A device according to claim 25, wherein:

the artificial proprioceptors include neuro-sensors.

34. A device according to claim 33, wherein:

the neuro-sensors are electrodes to measure the summation of one or more action potentials of peripheral nerves of the individual.

35. A device according to claim 25, wherein:

the artificial proprioceptors include kinematic sensors.

36. A device according to claim 35, wherein:

the kinematic sensors include means for measuring the position of articulated joints of lower extremities parts of the individual.

37. A device according to claim 35, wherein:

th kin matic sensors include means for measuring th mobility speed of lower extremities parts of the individual.

38. A device according to claim 35, wherein:

the kinematic sensors include means for measuring the mobility acceleration of lower extremities parts of the individual.

39. A device according to claim 35, wherein:

at least one of the kinematic sensors is located at the shank of the healthy leg of the individual.

40. A device according to claim 35, wherein:

at least one of the kinematic sensors is located at a socket of the prosthesis.

41. A device according to claim 25, wherein:

the artificial proprioceptors include kinetic sensors.

42. A device according to claim 41, wherein:

the kinetic sensors include means for measuring rotational forces at articulated joints of lower extremities parts of the individual.

43. A device according to claim 41, wherein:

the kinetic sensors include means for measuring reaction forces at lower extremities parts of the individual.

44. A device according to claim 41, wherein:

at least one of the kinetic sensors is located at a transtibial post of the prosthesis.

45. A device according to claim 25, wherein:

the artificial proprioceptors include plantar pressure sensors.

46. A device according to claim 45, wherein:

the plantar pressure sensors include force-sensing resistors measuring the pressure forces at underfoot areas into at least one human body plan.

47. A device according to claim 45, wherein:

at least one of the plantar pressure sensors is located at a metatarsophalangeal region of a foot of the healthy leg; and

at least one of the plantar pressure sensors is located at a calcaneus region of the foot of the healthy leg.

48. A device according to claim 45, wherein:

at least one of the plantar pressure sensors is located at a metatarsophalangeal region of a prosthetic foot of the prosthesis; and

at least one of the plantar pressure sensors is located at a calcaneus region of the prosthetic foot of the prosthesis.

49. A lower extremities prosthesis provided on one side of the lower body of an individual, the individual having a healthy leg on the other sid , the prosthesis comprising:

a plurality of artificial proprioceptors, at least on of the artificial proprioceptors being on the side of the healthy leg, and at least one of the artificial proprioceptors being on provided with the prosthesis;

means for generating data signals in real time at the artificial proprioceptors;

at least one actuating mechanism; and

means for generating control signals in real time for controlling the actuating mechanism in response to the data signals.

50. A prosthesis according to claim 49, wherein:

at least one of the data signals is supplied via a wired connection.

51. A prosthesis according to claim 49, wherein:

at least one of the data signals is supplied via a wireless connection.

52. A prosthesis according to claim 49, wherein:

the actuating mechanism is a passive electro-mechanical component that absorbs mechanical energy in order to modify dynamics of mechanical joints of the prosthesis.

53. A prosthesis according to claim 49, wherein:

the actuating mechanism is an active electro-mechanical component that absorbs and supplies mechanical energy in order to modify dynamics of mechanical joints of the prosthesis.

54. A prosthesis according to claim 49, wherein:

the artificial proprioceptors include myoelectric sensors.

55. A prosthesis according to claim 54, wh rein:

the myoelectric sensors include external electrodes to measure myoelectric activity of skeletal muscles of the individual.

56. A prosthesis according to claim 54, wherein:

the myoelectric sensors include internal electrodes to measure myoelectric activity of skeletal muscles of the individual.

57. A prosthesis according to claim 49, wherein:

the artificial proprioceptors include neuro-sensors.

58. A prosthesis according to claim 57, wherein:

the neuro-sensors are electrodes to measure the summation of one or more action potentials of peripheral nerves of the individual.

59. A prosthesis according to claim 49, wherein:

the artificial proprioceptors include kinematic sensors.

60. A prosthesis according to claim 59, wherein:

the kinematic sensors include means for measuring the position of articulated joints of lower extremities parts of the individual.

61. A prosthesis according to claim 59, wherein:

the kinematic sensors include means for measuring the mobility speed of lower extremities parts of the individual.

62. A prosth sis according to claim 59, wherein:

the kinematic sensors include means for measuring th mobility acceleration of lower extremities parts of the individual.

63. A prosthesis according to claim 59, wherein:

at least one of the kinematic sensors is located at the shank of the healthy leg of the individual.

64. A prosthesis according to claim 59, wherein:

at least one of the kinematic sensors is located at a socket of the prosthesis.

65. A prosthesis according to claim 49, wherein:

the artificial proprioceptors include kinetic sensors.

66. A prosthesis according to claim 65, wherein:

the kinetic sensors include means for measuring rotational forces at articulated joints of lower extremities parts of the individual.

67. A prosthesis according to claim 65, wherein:

the kinetic sensors include means for measuring reaction forces at lower extremities parts of the individual.

68. A prosthesis according to claim 65, wherein:

at least one of the kinetic sensors is located at a transtibial post of the prosthesis.

69. A prosthesis according to claim 49, wherein:

th artificial proprioceptors include plantar pressure sensors.

70. A prosthesis according to claim 69, wherein:

the plantar pressure sensors include force-sensing resistors measuring the pressure forces at underfoot areas into at least one human body plan.

71. A prosthesis according to claim 69, wherein:

at least one of the plantar pressure sensors is located at a metatarsophalangeal region of a foot of the healthy leg; and

at least one of the plantar pressure sensors is located at a calcaneus region of the foot of the healthy leg.

72. A prosthesis according to claim 69, wherein:

at least one of the plantar pressure sensors is located at a metatarsophalangeal region of a prosthetic foot of the prosthesis; and

at least one of the plantar pressure sensors is located at a calcaneus region of the prosthetic foot of the prosthesis.